

**CLAIMS**

1. Interconnect device for a fuel cell comprising an electrolyte, an anode and a cathode, the interconnect device comprising a channel system having a plurality of channels each channel being closed in one end and having either an inlet side or an outlet side at the open end of the channel each channel having an inlet side placed in alternating order with a channel having an outlet side, the inlet side of each channel placed in consecutive order on one side of the interconnect, and the outlet sides of each channel placed in consecutive order on the opposite side of the interconnect relative to the inlet side, and a second layer of channels is located on the surface of the channel system.
2. Interconnect device according to claim 1, wherein the channel system has a plurality of straight, parallel channels.
3. Interconnect device according to claim 1, wherein the second layer of channels intersect the channels in the channel system, the second layer of channels being closed at both ends and the channels of the channel system remaining open throughout their length.
4. Interconnect device according to claim 1, wherein the second layer of channels are closed at their surface and at both ends, and are placed parallel to and directly above the channels in the channel system, the closed surface being perforated in the area of the channels.

5. Interconnect device according to claim 4, wherein the closed, perforated surface of the channel system comprises a separate interlayer placed on the surface of the channel system.

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6. Interconnect device according to claim 1, and 2, wherein a second layer of channels is located on the surface of the channel system, the second layer of channels intersecting the channels in the channel system, the second layer of channels being closed at both ends, the channels of the channel system being partly closed.

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7. Interconnect device according to claim 3, wherein the second layer of channels comprises a separate interlayer placed on the surface of the channel system.

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8. Interconnect device according to claim 1, wherein the channels of the channel system are provided with distribution and collection holes.

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9. A fuel cell comprising an electrolyte, an anode, a cathode and an interconnect device according to claim 1.

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10. A fuel cell according to claim 9, wherein the fuel cell is a high temperature fuel cell.

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11. A fuel cell according to claim 10, wherein the fuel cell is a solid oxide fuel cell or a molten carbonate fuel cell.

12. A fuel cell stack comprising at least two fuel cells according to claim 9.